U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE

SUBCOMMITTEE ON ENERGY

HEARING CHARTER

Competition for Department of Energy Laboratory Contracts: What is the Impact on Science?

Thursday, July 10, 2003
10:00 a.m. – 12:00 Noon
2318 Rayburn House Office Building

1. PURPOSE

On Thursday, July 10, 2003, the Energy Subcommittee of the U.S. House of Representatives' Committee on Science will hold a hearing to examine the Department of Energy's (DOE) management and operations (M&O) contracts for its laboratories. Specifically, the hearing will focus on DOE's use of M&O contract competition to create accountability for scientific and managerial performance, and on whether the application of competition as a tool to promote accountability has particular implications for the conduct of science at the laboratories.

2. WITNESSES

Mr. Robert Card, Undersecretary for Energy, Science and Environment, U.S. Department of Energy. Prior to his DOE employment, Mr. Card was President and CEO, Kaiser-Hill Company, LLC. In that role he was responsible for the cleanup and closure of the US Department of Energy's (DOE's) Rocky Flats site. Mr. Card also served as a Director and Senior Vice President at CH2M HILL Companies, Ltd. Prior to the Rocky Flats assignment, Mr. Card served as Group Executive, Environmental Companies, responsible for the energy and environmental business, which was the firm's largest business practice. Mr. Card completed the Program for Management Development at Harvard Business School, received a M.S. in Environmental Engineering from Stanford University, and a B.S. in Civil Engineering from the University of Washington.

Ms. Robin Nazzaro, Director of Natural Resources and Environment at the General Accounting Office. Since 1993, she has overseen GAO's work on federally funded R&D, including responsibility for NIST, NSF and PTO as well as a number government-wide R&D programs. In addition, she is currently responsible for the Department of Energy's National Nuclear Security Administration, Environmental Management, and Waste programs as well as general DOE management issues such as security and contract management. Ms. Nazzaro has been with GAO since 1979. For several years, she worked on tax and financial management issues and later on information technology issues. She has also served as an assistant to the Deputy Director for Planning and Reporting, where she was division focal point for strategic planning and human resources management. Ms. Nazzaro received a bachelor's degree in K-12 education from the University of Wisconsin and recently received a senior management in government certificate in public policy from the John F. Kennedy School of Government at Harvard University.

Dr. Paul Fleury, Dean of Engineering and Frederick William Beinecke Professor of Engineering and Applied Physics at Yale University. Prior to joining Yale, Dr. Fleury was Dean of the School of Engineering at the

University of New Mexico, following 30 years at AT&T Bell Laboratories. In January 1992, he was chosen as Vice President for Research and Exploratory Technology at Sandia National Laboratories, where he was responsible for programs in physical sciences, high-performance computing, engineering sciences, pulsed power, microelectronics, photonics, materials and process science and engineering, and computer networking. In October 1993, upon termination of the contract under which AT&T managed Sandia for the Department of Energy, Dr. Fleury returned to Bell Laboratories. He has served on the Secretary of Energy's Laboratory Operations Board and the University of California President's Council on the National Laboratories, is currently a Board member of Brookhaven Science Associates which manages Brookhaven National Laboratory, and serves on visiting committees for Lawrence Berkeley, Sandia and Los Alamos National Laboratories.

Dr. John McTague, Professor of Materials at the University of California, Santa Barbara. From 2001 to 2003, he served as the University of California's Vice President for Laboratory Management, overseeing management of Los Alamos, Lawrence Livermore, and Lawrence Berkeley National Laboratories. Dr. McTague has over a twenty-year history of management at the Department of Energy's National Laboratories. Beginning in 1982, he was appointed as the first chairman of Brookhaven National Laboratory's National Synchrotron Light Source. He served on the Board of Overseers of both Argonne National Laboratory and Fermilab, where he was also Chairman of the Board. Dr. McTague is a founding co-chair of DOE's National Laboratories Operations Board and a ten-year member of the Secretary of Energy Advisory Board. In 1999, he retired from Ford Motor Company where he spent 12 years as Vice President of Research and Vice President of Technical Affairs. Prior to joining Ford, he served as Deputy Director and Acting Director of the White House Office of Science and Technology Policy and was Acting Science Advisor to the President. During the first Bush administration he was a member of the President's Council of Advisors on Science and Technology and U.S. chair of the U.S.-Japan High Level Advisory Panel of Science and Technology. Dr. McTague graduated from Georgetown University and received his PhD from Brown University.

3. OVERARCHING QUESTIONS

The hearing will address the following overarching questions:

- Can competition of M&O contracts for laboratories deliver management improvements? What criteria should be used to determine if competition is appropriate?

- What criteria should be used for awarding M&O contracts? What are the advantages and disadvantages of competition? What is the likely field of competitors, and is the field large enough to make the effort worthwhile?

- What is the impact of contractor change, or the uncertainty of contractor continuity, on the science programs at the laboratories? What has the result been where contractor changes have occurred?

- What is the best way to structure the relationship between the Federal government and scientists in a way that ensures accountability for management *and* performance of top-quality science?

4. OVERVIEW

DOE spends more federal funds on contracts than any other civilian agency; the vast majority, over $16 billion per year, goes to contractors to manage and operate 28 major facilities. Of this amount, nearly $9 billion goes to the operation of the 15 national laboratories listed in Table 1 on page five. Unfortunately, the public portrait of performance of both DOE and its contractors has often been a source of ongoing controversy rather than pride. The popular history of laboratory management is characterized by repeated reports of cost overruns, credit card

abuse, and security lapses. The General Accounting Office (GAO) designated DOE contract management as a high-risk area in 1990, and has reiterated that designation every year since.

The relationship between DOE and its M&O contractors is complex. In fact, there are actually numerous relationships, and not all of them have been contentious or problematic. For example, the relationship with the Stanford Linear Accelerator Center (SLAC) has worked remarkably well, with major facilities consistently delivered at or below budget. Other contracts, such as that with Associated Universities, Inc., at the Brookhaven National Laboratory, were terminated due to management failures. Still others, such as the contracts with the University of California to operate the Livermore and Los Alamos National Laboratories, have been consistently renewed despite cost overruns in the billions of dollars at the National Ignition Facility at Livermore, and serious management and security lapses at Los Alamos. However, most of these criticisms of DOE laboratories have centered on management functions rather than the mission-related outcomes that the laboratories were created to produce. While management functions are important, the evaluation of science outcomes is very different from financial reviews in time-scale, process and specificity.

Over the years, numerous critics have observed that it is difficult for the Department to carry out its oversight and accountability role without some credible means of sanctioning contractors. This is why the GAO, the Office of Management and Budget (OMB), and others have continually urged DOE to use competitive, performance-based contracts. However, competition also has real risks. Opponents of competition argue that needless competition can actually increase costs, especially if few competent competitors are likely to come forward. More importantly, the uncertainty of leadership and the disruption of work flow if contractors change, opponents say, can distract scientists from their mission and delay important scientific work.

These issues of laboratory governance recently came to the fore because of several decisions at DOE. On April 30, 2003, DOE announced that two major laboratories' M&O contracts (that had never previously been competed) would undergo competition: the Los Alamos Laboratory and the Idaho Laboratory (formerly Argonne National Laboratory (ANL)-West and Idaho National Engineering and Environmental Laboratory (INEEL).) Despite the fact that these two contracts are both slated for competition, their situations are not similar. In the case of Los Alamos, a new round of problems associated with credit card abuse and procurement fraud, prompted extensive discussions with Congressional representatives and other stakeholders. These culminated in the announcement to compete the M&O contract, two years before to the contract expiration. In the case of ANL-West, there had been no allegations of mismanagement, and few prior consultations with the Congress before the announcement, and little more than a year before the contract expired. This extremely inconsistent treatment of two major laboratories and contractors brings into question whether DOE had a uniform policy or criteria for determining how contracts are structured and whether they are competed.

The next day, on May 1st, DOE answered those questions when it formally tasked a Blue Ribbon Commission on the Use of Competitive Procedures for Department of Energy Laboratories to recommend procedures and criteria for M&O contract competition decision-making. The Commission was slated to report by the end of July. The Committee believes that the Commission, and ultimately DOE, will need to address the important questions that are the focus of this hearing, in formulating a competition policy. (The Senate Committee on Energy and Natural Resources has also been examining the issue of laboratory governance.)

5. BACKGROUND

History of DOE Laboratory Contracting.

The tradition of the Government Owned Contractor Operated (GOCO) structure for DOE laboratories was first established when the weapons laboratories were created in the 1940s. While a number of factors contributed to the selection of the GOCO approach, the size, scope, and expense of the pursuit of nuclear weapons, posed a new challenge. Government salaries were insufficient to attract the "best and brightest" scientists, nor were government procurement rules flexible enough to manage work on these issues of urgent national importance. The first laboratory contractors were either universities for the more science-oriented laboratories (such as Los

Alamos and Argonne) or large companies with major industrial laboratories, such as AT&T or Union Carbide. Direct profit did not appear to be a motive for contractors to manage laboratories, e.g., AT&T accepted only $1 per year to manage Sandia. Over time, the fees have generally increased, and range from zero at SLAC, to up to $34 million per year for INEEL. Fees constitute a relatively small percentage of contract revenues, generally less than 1 percent, with INEEL again having the most generous contract, with over 4.5 percent of the INEEL budget dedicated to fees.

The relationship between DOE and its laboratory M&O contractors has evolved considerably since the first contracts were set up decades ago. While few observers would deny the success of the science at DOE laboratories, it is also difficult to deny that the pursuit of the laboratories' missions has sometimes come at the expense of normal housekeeping and caretaking chores that taxpayers, rightfully, expect with the expenditure of their funds. Consequently, the Congress and its oversight committees, OMB, the General Accounting Office, and the DOE Inspector General increased their scrutiny of DOE. DOE, in turn, increased its oversight of laboratory functions, using tools like "Tiger Teams" to attack environmental lapses and contract reforms to address financial and managerial shortcomings. Despite increased scrutiny, or perhaps because of it, managerial failures continued to come to light, causing more intensive efforts by oversight bodies, and a proliferation of rules and regulations.

In response to this increasing regulation, scientists began to complain that overhead costs were eating into their science budgets, and to complain that paperwork, conflicting regulatory mandates, and endless review processes were causing the quality and quantity of the scientific product to decline. Dr. Siegfried Hecker, former director of Los Alamos National Laboratory, recently commented, "The net result has been to significantly diminish the ability of the laboratories to accomplish their missions and to dramatically reduce productivity."

Furthermore, due to what Professor Bob Behn of Harvard University calls "the accountability bias," the increased scrutiny has tended to be on the easily measurable. Behn distinguishes between accountability for what he calls "finances and fairness" and accountability for performance:

> If you want to be in the accountability-holding business, it makes more sense to concentrate on process rather than performance. This is because our accountability expectations for finances and fairness are much clearer than they are for performance. … the accountability standards for money and equity are much more formal, much more specific, much more detailed, much more objective, much more established and much more accepted.[1]

While Behn was commenting on government programs generally, in this case the problem of the accountability bias is exacerbated by the inherent difficulty of measuring scientific performance. The long-term, technically-specialized nature of the science carried out at the majority of DOE laboratories does not lend itself to the type of specific measures common to many other government programs. Thus, while it is important to make sure that accountability mechanisms are in place, the design of those mechanisms should reflect programmatic context and the type of accountability that we seek.

Because DOE is a large and diverse organization, with contractors tasked with several very different types of missions—science; weapons design, production, and stewardship; product engineering; and environmental cleanup—it may be necessary to design different accountability mechanisms for different missions. It is crucial that any redesign of government-contractor relationships, including any decision to routinely re-compete contracts, be made in the context of these missions.

For example, the science missions of DOE have benefited by relationships to academic institutions over the years. However, it is not clear that non-profit institutions have the wherewithal and motivation to compete with commercial enterprises every five years. The motivations of academic institutions interested in operating laboratories could be very different from those of industrial organizations, and therefore require different

[1] Robert D. Behn, "rethinking democratic accountability" Brookings Institution Press, Washington, DC, p12.

incentives. In addition, the types of incentives offered for science M&O contracts could well differ from those for other activities. Finally, the effect on scientific activities from ongoing uncertainty about management and operations leadership, or from a transition from one contractor to another, may be different than the effect on other DOE missions.

This hearing is designed to explore avenues to optimize the management and accountability structures at DOE science laboratories for both management and scientific performance.

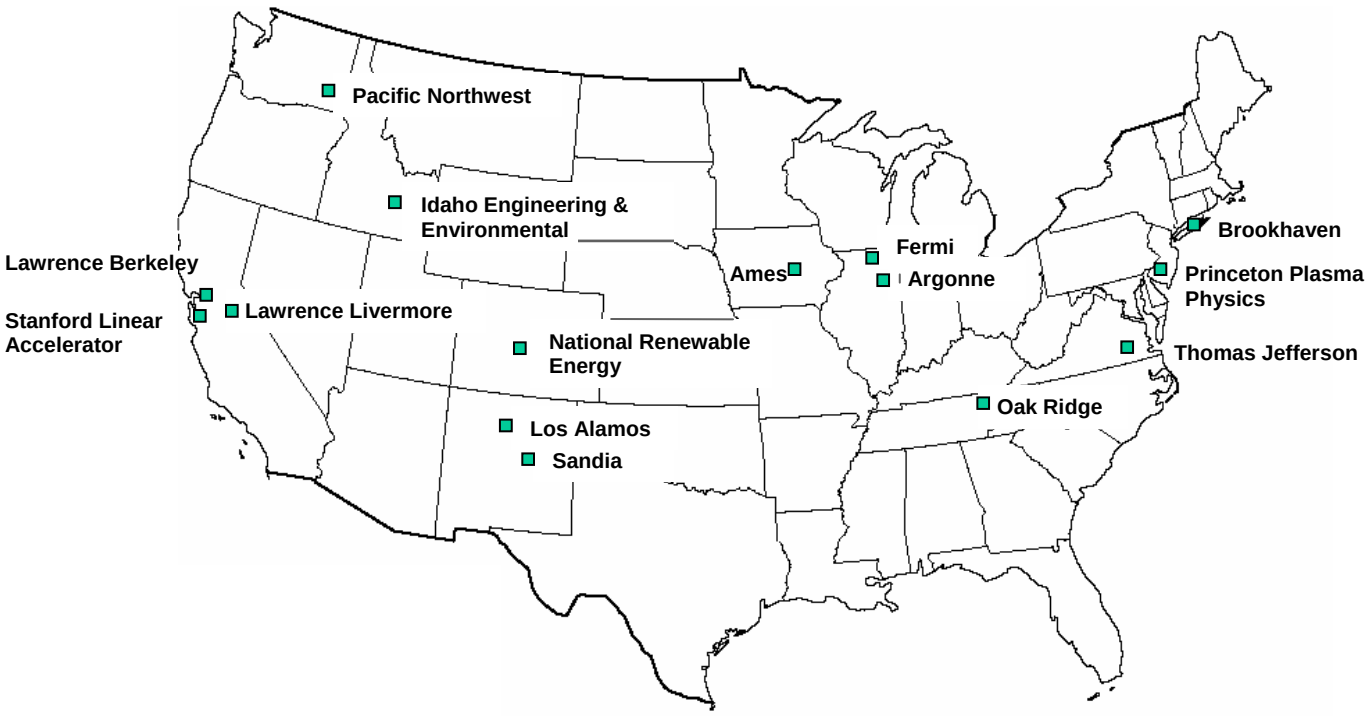
Table 1: Competition Status in DOE Laboratories that Receive Office of Science Funding

National Laboratory *never competed	Contractor	FY03 $ (millions, Incl. non-DOE)	DOE host office**	Past contractor	Establishment date and last contractor change
Ames*	Iowa State U.	$30	Science	N/A	Est. 1943
Argonne National Laboratory *	U of Chicago	$494	Science (but has much NE and EERE)	N/A	Est. 1946
Brookhaven National Laboratory	Brookhaven Science Associates (SUNY-Stony Brook/Battelle)	$382	Science	Associated Universities, Inc. (AUI)	1998, Est. 1947
Fermi *	URA	$227	Science	URA	Est. 1967
Idaho National Engineering & Environmental Laboratory	Bechtel BWXT Idaho, LLC (Bechtel National, Inc., BWX Tech. Co and INRA a consortium of eight regional universities)	$663	EM --soon to be NE	Lockheed Martin EG&G	Every 5 years since 1949 startup.
Lawrence Berkeley National Laboratory*	U of California	$442	Science	N/A	Est. 1947
Lawrence Livermore National Laboratory *	U of California	$1,230	NNSA	N/A	Est. 1952
Los Alamos National Laboratory *	U of California	$1,800	NNSA	N/A	Est. 1943
National Renewable Energy Laboratory	Consortium of MRI, Battelle, and Bechtel National, Inc.	$210	EERE	Midwest Research Institute, (MRI)	1998, Est. 1977
Oak Ridge National Laboratory	U of Tennessee-Battelle LLC.	$647	Science	Lockheed-Martin	April 2000 Est. 1943
Pacific Northwest National Laboratory *	Battelle Memorial Institute	$547	Science	N/A	Est. 1964
Princeton Plasma Physics Laboratory*	Princeton U.	$68	Science	N/A	Est. 1975
Sandia National Laboratory	Lockheed Martin (formerly Martin Marrietta)	$1,746	NNSA	AT&T	1993; Extended to Dec 2008. Est. 1948
Stanford Linear Accelerator Center*	Stanford U.	$184	Science	N/A	Est. 1976
Thomas Jefferson National Accelerator Facility*	SURA (Southeastern Universities Research Association)	$92	Science	N/A	Est. 1984

**Abbreviations for DOE Program Offices

EERE – Energy Efficiency and Renewable Energy
EM – Environmental Management
NE – Office of Nuclear Energy
NNSA – National Nuclear Security Administration

Fig. 1: Location of DOE National GOCO Laboratories



6. WITNESS QUESTIONS

Questions for Under Secretary Card

- What is DOE's current policy toward competition of M&O contracts, and what led the department to reconsider that policy?
- When laboratories have changed contractors in the past, what effect did this have on the operation of the laboratories in question?
- How specific a set of recommendations do you expect to receive from the Blue Ribbon Commission? When do you expect the Commission to report, and what procedures do you expect DOE to use to review and implement its recommendations?
- Why were some decisions made on laboratory M&O contract competitions on the eve of the formation of the Blue Ribbon Commission?
- What are the advantages and disadvantages of competing M&O contracts?

Questions for Ms. Robin Nazzaro

- What public statements has the Department of Energy (DOE) made in response to your recommendations that DOE compete more of its laboratory contracts? Are there any trends with regard to competition for science laboratories run by universities?

- Do your reports provide evidence that competition of management and operations contracts for laboratory management deliver management improvements? Are some laboratories better candidates for competition than others? What are the criteria that matter most in making a competition decision? How should DOE determine the timeframe for contract competition?
- What evidence do you have regarding universities ability to compete successfully with for-profit entities? Do you have estimates of the cost of competition which some have estimated to be as high as $10 million? How many universities are qualified as potential competitors?
- What is the purpose of performance based contracting for laboratory management? What criteria should be used to evaluate proposals—do we even know what makes a good laboratory contractor? How can one make legitimate and unbiased comparisons of competitors? What is the likely field of competitors? Is the field large enough to make the effort worthwhile? Should an incumbent have an advantage if that contractor receives high performance scores?

Questions for Dr. Paul Fleury

- What motivates a contractor to want to operate a Department of Energy (DOE) laboratory? Why did AT&T decide not to renew the management contract for Sandia in 1993?
- What is the impact, if any, on the science programs at the laboratories due to uncertainty of contractor continuity? How does a change of contractor affect science operations? How did Sandia employees react to the management changeover in 1993?
- If DOE decides to compete laboratory management and operations contracts, what criteria should be used to evaluate proposals – do we even know what makes a good contractor? Should an incumbent have an advantage if that contractor receives high performance scores? How can one make legitimate and unbiased comparisons of competitors?
- What is the likely field of competitors? Is it large enough to make the effort worthwhile?
- We frequently hear criticisms of laboratory oversight as being intrusive “micro-management”. What do you think the proper review and oversight mechanisms should be? How often do you think reviews should occur?
- Do you believe the current performance-based contract incentives deliver improved management or science results? What should the incentives be for contractors? Should the incentives be different for non-profit versus for-profit entities? What can be done to better align the incentives of science professionals at laboratories with those of the contractors?

Questions for Dr. John McTague

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